

Human Adaptation to Disaster

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Introduction

Never have the problems of sudden change and adaptation, order and disorder, destruction and reconstruction in human affairs been more compelling. Nature's potential of death and destruction is scarcely abated. Catastrophes of weather and earthquake occur no less frequently and are only slightly mollified by man's defenses. At the same time, man's potential to kill and destroy—whether by weapons of thermonuclear and biological warfare or by "peaceful" technology unexpectedly gone awry—becomes more and more awesome.

The urgent practical import of these developments, together with the opportunities for new understanding of human behavior inherent in their study, have attracted a growing scientific interest, especially since the end of World War II. Much of this work has dealt with those sudden and disruptive occurrences called disasters. Conducted by a variety of specialists, this line of research began with a period of quite random empiricism. Investigators scratched for facts at numerous disaster sites, the disasters ranging from "small" natural calamities like floods to the massive catastrophes of atomic air attacks. The period of "raw" empiricism yielded a file of data and miscellaneous insights. Much of this and subsequent inquiry was facilitated by official agencies like the National Research Council, Rand Corporation, U.S. Strategic Bombing Survey, the Civil Defense Administration; by university affiliated agencies like the National Opinion Research Center at Chicago, the Department of Sociology at the University of Michigan; and by numerous individual faculty members.

One of the early symposia on disaster research was staged by a variegated group of scientists and laymen with a common interest in understanding change in human organizations—the Society for Applied Anthropology. This occurred in 1953 at the Society's meeting in Chicago. In 1955 the National Research Council, which has aided so many inquiries through its Committee on Disaster Studies, sponsored a conference at Vassar College on "Theories of Human Behavior in Extreme Situations." Also in 1955, the Society for Applied Anthropology again featured disaster research at its meeting in Bloomington, Indiana. These latter papers treated matters of interest previously identified at the Vassar Conference.

The seven papers published here were presented, or based upon presentations, at one or the other of these three meetings. All are essentially transcripts of verbal reports and not formally prepared papers. Fortunate and noteworthy, we think, is the fact that the papers do not point to a "disasterology." The theoretical ideas they suggest are largely propositions borrowed from other disciplines because of their relevance to some aspects of disaster. And they are applied to disaster study *with appropriate modification*. The "appropriate modification" feature is peculiarly important because the modifications not only give greater precision to disaster theory, but extend the scope of the original and more abstract

formulations. For instance, in relation to communications theory, Harry Williams suggests, on the basis of disaster knowledge, "that when applied to human behavior, the servo-model must include feedback loops which are based upon substitute or intermediate sources of feedback and reinforcement."¹ Thus, in a very real sense, disaster studies should catalyze theoretical advances in other fields. These side effects in the long run may be as important as the development of a specific understanding of disaster itself. Nevertheless, we share the view emphasized in an earlier collection of essays on disaster research that there is need for "fewer disasters, better studied" and for attention to "problems of theory."²

There is one theoretical idea which characterizes all the papers. This is the idea of system, and, correlatively, the frame of reference thereof. This idea, this frame of reference, may be described thusly. Organization or system—we would use these terms interchangeably—changes are in response to forces originating either outside or inside "the system." The *system* under scrutiny may be a personality, a pair relationship or small group, a community, association, society or culture; or certain combinations of the parts of any of these viewed as interdependent, such as the "subsystems" of perception, communication, and socio-cultural patterns considered in the chapters following. The *forces* that concern us here are, primarily, disasters, real or simulated, "natural" or man-made, comparatively sudden and surprising. The force tends to produce *stress*, defined as a condition of strain, contradiction or discrepancy between any of the parts or elements of a given system, or between that system and its field of environment. Stress, in turn, generates pressure for *change*; either change in internal *adjustment* processes or in the processes of external *adaptation* and defense. This account, of course, is nothing more than a crude and brief derivation from general systems theory as it has developed since about 1900 in biology, psychology, sociology, and in an earlier and more mechanistic form, in physics and chemistry.³

It is hardly surprising that research on disasters—on "extreme situations" as they have been called—should find system concepts useful. After all, the system idea in its least

1. Williams, *infra.*, p. 15.

2. Dwight W. Chapman, editor, "Human Behavior in Disaster: A New Field of Social Research," *Journal of Social Issues*, No. 3, Vol. X, 1954.

3. For historical account and illustration of these developments see: R. K. Merton, *Social Theory and Social Structure* (Chicago: Free Press, 1949), especially pages 365-369; Ludwig von Bertalanffy, *Problems of Life* (New York: John Wiley & Sons, 1952); Talcott Parsons, *The Social System* (Chicago: Free Press, 1951); A. R. Radcliffe-Brown, *Structure and Function in Primitive Society* (London: Coln and West, 1952); James G. Miller, "Toward a General Theory for the Behavioral Sciences," *The American Psychologist*, Vol. X, September, 1955, pp. 513-531; J. Robert Oppenheimer, *Science and the Common Understanding* (New York: Simon and Schuster, 1953).

mathematical and least abstract form first of all is dictated by "common sense" and by the logic inherent in all change and process. Such commonplace system-directed questions as these are evoked by countless events: "What was the organization before?" "What happened and how?" "What are the consequences?"

Three main aspects of behavior in disasters are handled, more or less rigorously, by system concepts in the seven papers following. These three interdependent systems of human behavior are: socio-cultural, perceptual, communicational. Though none of the authors writes of any one system exclusively, all but the last are largely concerned with one of the three systems.

Three papers on socio-cultural situations are printed first because "cases" of change in community behavior have characterized *Human Organization* and will be more familiar to the usual readers of the journal. First-hand observations of disaster-stricken communities are reported by Spiegel ("The English Flood of 1953"), by Fritz ("Disasters Compared in Six American Communities"), and by Schneider ("Typhoons on Yap"). Each of these authors has sought to identify the continuities between pre-disaster, impact, and post-impact periods. They have sought to describe also the processes or mechanisms by which groups or communities attempt to cope with the disruptive forces of disaster. The parallels between these geographically distant socio-cultural instances are striking, as Demerath notes in the last paper, "General Propositions: An Interpretative Summary."

In the fourth paper, "Some Functions of Communication in Crisis Behavior," Williams employs the "cybernetics" or "communications theory" model now used increasingly for study of human communicational systems. The eight rough hypotheses that he develops with reference to information and action in crises are nicely supplemented and extended by the account of perceptual systems that Kilpatrick furnishes in the fifth paper, "Problems of Perception in Extreme Situations." Kilpatrick uses the transactional approach to perception—

widely known through the Princeton distorted room experiments—to indicate the kind of perceptual reorganization by the individual evoked by disaster. Wallace, in the sixth paper, "Mazeway Disintegration: The Individual's Perception of Socio-Cultural Disorganization," deals with certain relations between two behavior systems—the perceptual and the socio-cultural. To explain the oft-noted phenomenon of shock or apathy ("the disaster syndrome"), Wallace takes the object loss model from psychoanalytic theory and applies it to extreme situations where it is the familiar *Gestalt* of his culture that is the object which the individual perceives as "lost."

To the editors, one fact especially stands out. The systems of man's behavior are highly unstable compounds, tenuously structured and forever needing to be revitalized. By no means are they the neat and orderly automata of the seventeenth century clockmakers, or as fantasied by some scholars of the present. A prime contribution of disaster research may well be to correct such mechanistic fallacies and to enlarge the social scientists' awareness of the precariousness and flux to be observed even in the most "stable" of socio-cultural systems. As such awareness becomes the greater, so will our ability to analyze disasters improve. We will be able to delineate how people normally behave in response to the gradual erosion of their socio-cultural systems. And, with an ability to understand this "normal" response, we will be able to grasp more precisely the process of response when socio-cultural systems do not disintegrate or change slowly, but collapse precipitously or are so threatened. Also, with a more sophisticated approach to socio-cultural systems, it will be possible for us to become more exact in our statements of what a disaster is a disaster *to*. There is a tendency to speak of "a disaster" with only the impact agent and a statistic for casualties and physical destruction in mind, and to be very vague about the identity of the whole target. And speaking of targets, let us hope and work to gain the day when there are no worse eventualities in prospect for any man than the typhoons of Yap—without "fallout"!